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09/189,768	11/10/1998	SADAYUKI NARUSAWA	51270-245585	5853

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EXAMINER
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ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/189,768

Applicant(s)

NARUSAWA ET AL.

Examiner

Lun-See Lao

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 40-82 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 40-82 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### *Introduction*

1. This action is in response to applicant's amendment filed on 08-26-2005. Claims 40-82 are pending. Claims 1-39 have been canceled and claims 40-82 have been added.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 40, 49, 55-59, 62-63, 66-70 and 72-74 and 80-82 are rejected under 35 U.S.C. 102(b) as being anticipated by Warman (US PAT 5,657,221).

Consider claim 40 warman teaches that

a serial bus cable (see fig.1, 28 and see col. 7 line 63-col. 8 line 6),

an audio device (21), including

a serial bus interface (I/F) unit (fig.2, 47) that is connectable to the serial bus cable (28) so as to transmit and receive digital audio data via the serial bus cable, wherein the serial bus I/F unit separates audio data and control data from the received digital audio data (see col. 7 line 32-48),

a signal processor (see fig.2, 46) that is connected to the serial bus I/F unit and that performs prescribed digital signal processing,

Art Unit: 2644

a D/A converter inherently (because, the non-computer device (21) inherently includes the D/A converter for producing the analog signal output to the speaker) that is connected to the signal processor so as to convert the digital audio data into analog audio signals,

and an audio output section for outputting the analog audio signals from the D/A converter inherently (because, the non-computer device (21) inherently includes the D/A converter for producing the analog signal output to the speaker and see col. 6 line 30-col. 7 line 62)

a loudspeaker for performing electro-acoustic conversion on the analog audio signals so as to provide an audio output (see col. 30-59),

a system control unit (see fig.3, 29a) that controls the audio device based on the control data, which are isolated by the serial bus I/F unit and that is capable of transmitting the control data of the audio device to the serial bus cable via the serial bus I/F unit (see col.11 line 25-col. 12 line 35)

an operational switch (see fig.3, (51,52)) that is a manually operable member controlled by a user, and

a display that can display (see fig.3, (48, 29a)) the content of operation and control of the audio device for the user (see col. 8 line 50-col. 9 line 50); and

a personal computer (see fig.1,20), including

a CPU for executing operating software and application software (see fig.5 and col. 10 line 14-32),

a first I/F that is connectable to the serial bus cable (28) so as to perform bi-

Art Unit: 2644

directional transmission with the audio device via the serial bus cable (see col. 6 line 60-col. 8 line 47),

a second I/F that is connectable to a communication line and that serves as a network interface for inputting and outputting data via the communication line (see abstract),

a graphical user's interface (GUI) that has a data input section operated by the user (see fig.6),

a display (see figs. 3-6) for displaying data necessary to operate the audio device, a control data processor that is connected to the first I/F and the graphical

user's interface (see figs. 3-6) so as to control the personal computer based on the control data given from the first I/F and that produces control data based on the operation of the graphical user's interface and sends it to the serial bus cable via the first I/F, an audio data storage that serves as a memory for storing the digital audio data (see col. 9 line 50-col. 10 line 32), and

an audio data processor (see fig. 5, 60) that selects prescribed digital audio data stored in the audio data storage based on the operation of the graphical user's interface so as to send it to the serial bus cable via the first I/F, wherein each of the audio device and the personal computer is capable of reproducing the digital audio data independently(see col. 9 line 50-col. 10 line 32),

the control data (see fig.4) allowing the audio data to operate and the digital audio data reproduced in the audio device are produced based on the operation of the graphical user's interface (see col. 10 line 33-col. 11 line 24), and

Art Unit: 2644

the control data (see fig.6) and the digital audio data are sent to the audio device (see fig.3), and the control data produced by the audio device is sent to the personal computer so as to reflect the content of the control data on the graphical user's interface displayed in the display in such a way that the operation information of the audio data match the operation of the graphical user's interface (see col. 10 line 33-col. 12 line 35).

Consider claim 49, Warman teaches that an audio system is including a digital external input terminal for receiving digital audio signals from an external device (see, fig.2, (24,26, 22) and col. 7 line 10-62).

Consider claims 55-59, Warman teaches the signal processor executes graphic equalization, (see fig.1 and col. 6 line 30-60) and the signal processor executes sound field control (see fig.6 and col.11 line 25-col. 12 line 35); and the audio output section includes a volume controller (see fig.6 and col.11 line 25-col. 12 line 35); and an optical disk unit (see col. 14 line 27-64); and the optical disk unit is a CD player that can play back a music CD (see col. 14 line 27-64).

Consider claims 62-63, Warman teaches that an audio system includes an optical disk unit, inherently (by CPU) wherein the memory is realized by an optical disk and an optical disk player (see col. 10 lines 14-32 and col. 14 line 27-64); and the optical disk is a music CD (see col. 14 line 27-64).

Consider claims 66-70, Warman teaches that the input section corresponds to a keyboard (see fig.1 and abstract); and the input section corresponds to a mouse

Art Unit: 2644

(see fig.1 and abstract); and an audio system is including an operation panel showing a power switch for turning on and off power supplied to the audio device (see fig.3, 51, 52 and col. 8 line 50-col. 9 line 5); and an audio system is including an operation panel showing a plurality of switches for selecting audio sources (see fig.1, 26 and col. 6 lines 30-60); and an audio system is including an operation panel showing a mute adjuster for adjusting a mute Level (see fig.3, 51, 52 and col. 8 line 50-col. 9 line 5).

Consider claims 72-74 Warman teaches that an audio system is including a loudspeaker for performing electro-acoustic conversion on audio signals produced by the personal computer (see col. 6 line 30-60); and the loudspeaker inherently is formed by a pair of speakers for performing stereo playback (see col. 6 line 30-60) and the audio system is including an operation panel showing a balance adjuster for adjusting an output balance with respect to the pair of speakers (see fig.3, channel and channel 2 and col. 6 line 30-60 and col. 8 line 50-col. 9 line 50).

Consider claims 80-82, Warman teaches that an audio system is including plural types of serial bus cables, wherein the audio data and the control data are transmitted using different cables (see col. 7 line 63-col. 8 line 6); and the control data is transmitted via a R5232C cable (see col. 8 lines 31-47) and the audio data is transmitted via a SPDIF cable (such as, optical cable and see col. 7 line 63-col. 8 line 6)

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2644

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 41-43 and 64-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Warman (US PAT 5,657,221)

Consider claims 41-43, Warman does not show that system has an antenna, but Warman teaches that an audio system includes a tuner which is inherently including an antenna (see fig. 1, 24) for receiving audio signals from an external device (see col.6 line 30-60); on the other hand, Warman does not clearly teach the tuner receives AM signals and the tuner receives FM signals, however, it is well known in the art (official notice is taken) that a tuner receiver can receive AM signals and FM signals.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a tuner that can receive AM signals and FM signals to provide more entertainment for the user.

Consider claims 64-65, Warman does not clearly teach the second I/F is connected to the Internet and connected to a LAN, but Warman indicated a computer network (see abstract) and it is well known the art (the official notice is taken) the computer can be connected to the Internet and to the LAN.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that computer network as taught by Warman could have the computer connected to the Internet and to the LAN to share the information with the users.



6. Claims 44-46, and 61, 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Warman (US PAT 5,657,221) in view of Silfvast (US PAT. 5,524,060).

Consider claims 44-46, Warman does not clearly teaches that an audio system is including an A/D converter for performing analog-to-digital conversion on the received audio signals; and an analog external input terminal for receiving analog audio signals from the external device; and the A/D converter performs analog-to-digital conversion on the received analog audio signals.

However, Silfvast teaches that an audio system is including an A/D converter for performing analog-to-digital conversion on the received audio signals (see fig.8,135); and an analog external input terminal for receiving analog audio signals from the external device (see fig.5, 51); and the A/D converter (see fig.8, 135) performs analog-to-digital conversion on the received analog audio signals (see col. 12 line 54-col. 13 line 59).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Silfvast in to Warman to generate an audio signal be selectively varying analog or digital and converter analog-to-digital to applied to the digital processing in the system for the market demand.

Consider claim 61 Silfvast teaches that an audio system includes a mixing

Art Unit: 2644

portion in which the digital data provided from the serial bus I/F unit (see fig. 5) are converted into analog signals, which are mixed with other analog signals (see fig.8 and col. 12 line 54-col. 13 line 59 and see the discussion on claims 44-46).

Consider claim 71, Silfvast teaches that an audio system is including an operation panel (see fig.10) showing a mixing adjuster for adjusting a mixing level adapted between the personal computer and other audio source (see fig.1 and col. 5 line 22-57 and col.14 line 41-col. 15 line 2 and see the discussion on claims 44-46).

7. Claims 47-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Warman (US PAT 5,657,221) as modified by Silfvast (US PAT. 5,524,060) as applied to claim 45 above, and further in view of Washikawa (US PAT 6,492,909).

Consider claim 47, Warman and Silfvast do not clearly teaches that an audio system includes a tuner and a switch for selectively inputting the analog audio signals from the tuner or the analog audio signals from the analog external input terminal.

However, Washikawa teaches that an audio system includes a tuner (see fig. 9, 2) and a switch (see fig. 3, 21,32) for selectively inputting the analog audio signals from the tuner or the analog audio signals from the analog external input terminal (see col. 3 line 9 –col. 4 line 65).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Washikawa into the teaching of Warman and Silfvast to provide an audio signal processing apparatus by which the connection work of a system stereophonic apparatus can be carried out easily with no complexity.

Art Unit: 2644

Consider claim 48 Silfvast teaches that an audio system is including an A/D Converter (see fig.8, 135) for performing analog-to-digital conversion on the analog audio signals, which are selected by the switch (137, 143 and col. 12, line 54-col. 13 line 59).

8. Claims 50-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Warman (US PAT 5,657,221) in view of Schotz (US PAT 5,832,024).

Consider claim 50, Warman does not clearly teach that an audio system is including a digital interface receiver for separating control bits and audio data from digital data input thereto.

However, Schotz teaches that an audio system is including a digital interface receiver (see fig.3b, 214) for separating control bits and audio data from digital data input thereto (see col. 13 line 30-50).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Schotz into Warman to provide a stereo digital audio over the air at a high digital audio bit rate while continuously maintaining synchronization between the transmitter and receiver using a high frequency carrier at low power and maintaining the quality of the audio.

Consider claims 51-53, Schotz teaches that the digital interface receiver (DIR) (see fig.3B, 214) detects a reproduction clock frequency from the digital data so as to extract data in synchronization with the reproduction clock frequency (see col. 12 lines 40-65), and wherein the DIR (214) separates the control bits from the extracted data

Art Unit: 2644

(see col. 13 lines 30-67); and the DIR (see fig.3b, 214) verifies whether or not the digital data input thereto are reliable (see col. 13 lines 30-67); and the DIR (see fig.3b, 214) performs verification based on a sampling frequency (see col. 12 lines 40-65 and col. 13 lines 30-67).

Consider claim 54, Schotz teaches that an audio system is including a plurality of digital input sources (see fig. 1, (26)) and a multiplexer (28, input means) that selectively outputs the digital input sources or that mixes the plurality of digital input sources (see col. 6 lines 10-34 and discussion on claim 50).

9. Claim 60 is rejected under 35 U.S.C. 103(a) as being unpatentable over Warman (US PAT 5,657,221) in view of Agarwal (US PAT 6,007,228).

Consider claim 60, Warman does not clearly teach that an audio system is including a mixing portion that mixes the digital data provided from the serial bus I/F unit with other digital data.

However, Agarwal teaches that an audio system is including a mixing portion (see figs. 10a-10b) that mixes the digital data provided from the serial bus I/F unit with other digital data (see col. 11 line 44-col. 12 line 25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Agarwal into Warman to provide the audio signal from a CD player must be mixed with computer generated sound by a mixer insider the computer.

Art Unit: 2644

10. Claims 75 and 78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Warman (US PAT 5,657,221) view of Fuchu (US PAT 6,314,326).

Regarding claims 75 and 78, Warman fails to teach that the serial bus cable is base on an universal serial bus standard; and the serial bus cable is based on an IEEE 1394 standard.

However, Fuchu teaches that the serial bus cable is base on an universal serial bus standard; and the serial bus cable is based on an IEEE 1394 standard (see col.7 line 38-col.8 line 65).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Fuchu into Warman to provide a visual interpretation of how a signal is being processed, to control with high resolution and accuracy, and to be able to return to successful characteristics and parameters as a starting point for new application.

11. Claims 76-77 and 79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Warman (US PAT 5,657,221) as modified by Fuchu (US PAT 6,314,326) as applied to claims, 75 and 78 above and further in view of Wooten (US PAT 6,061,411).

Consider claim 76, Warman and Fuchu fail to teach that the transmission control is performed in units of 1 millisecond frames.

However, Wooten teaches that the transmission control is performed in units of 1 millisecond frames (see col. 6 line 4-col. 7 line 5).

Art Unit: 2644

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Wooten into the teaching of Fuchu, Warman to provide a host controller for modifying the frame timing.

Consider claim 77, Wooten teaches that the audio data (such as from the telephone) and the control data are separated from each other based on a start-of-frame (SOF), which is detected from a basic frame (see col. 6 line 4-col. 7 line 5).

Consider claim 79, Wooten teaches that the audio data and the control data are separated from each other upon reception of a self-ID packet (such as, packet identifier (PID) and see col. 6 line 4-col. 7 line 5 and discussion on claim 76).

### ***Response to Arguments***

12. Applicant's arguments filed 08-26-2005 have been considered but are moot in view of the new grounds of rejection.

### ***Conclusion***

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

Art Unit: 2644

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kawashima (US PAT 5,518,408) and Taniguchi et al. (US PAT 6,022,223) are recited to show other related the audio system utilizing personal computer.

15. Any response to this action should be mailed to:

Mail Stop \_\_\_\_ (explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents  
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Alexandria, VA 22313-1450

Facsimile responses should be faxed to:  
**(703) 872-9306**

Hand-delivered responses should be brought to:  
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Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao,Lun-See whose telephone number is (571) 272-7501. The examiner can normally be reached on Monday-Friday from 8:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian, can be reached on (571) 272-7848.

Art Unit: 2644

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (571) 272-2600.

Lao, Lun-See  
Patent Examiner  
US Patent and Trademark Office  
Knox  
571-272-7501  
Date 11-4-2005



VIVIAN CHIN  
SUPERVISORY PATENT EXAMINER  
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